Exercise 1 *The London Eye is a Ferris wheel 135 meters in diameter. It is boarded at its lowest point (6 o'clock) from a platform which is 6 meters above ground. The wheel makes one full rotation every 30 minutes, and at time $t = 0$ you board at the loading platform (6 o'clock). Let $d = g(t)$ denote your horizontal distance from the diameter of the wheel perpendicular to the ground in meters after t minutes.*

(a) *The period of the function $d = g(t)$ is* $\boxed{15}$ *minutes.*

(b) *The midline of the function $d = g(t)$ is* $\boxed{33.75}$ *meters.*

(c) *The amplitude of the function $d = g(t)$ is* $\boxed{33.75}$ *meters.*

(d) *Which of the following graphs is the graph of $d = g(t)$?*

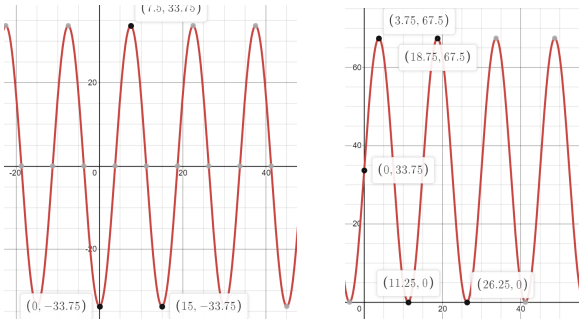

Figure 1: A on the left and B on the right

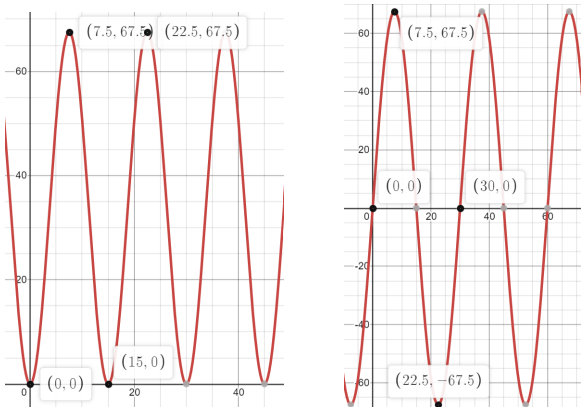

Figure 2: C on the left and D on the right

Acknowledgements: Active Prelude to Calculus (https://activecalculus.org/prelude)

Multiple Choice:

(i) A

(ii) B

(iii) C ✓

(iv) D

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